# UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/754,301 | 01/05/2001 | Masayoshi Hashima | 1075.1137/JDH | 3311 |

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| 21171 7590 11/20/2006 | | **EXAMINER** |
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| 1201 NEW YORK AVENUE, N.W. | **ART UNIT** | **PAPER NUMBER** |
| WASHINGTON, DC  20005 | 2123 | |

DATE MAILED: 11/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

|  | Application No. | Applicant(s) |
|---|---|---|
| | 09/754,301 | HASHIMA ET AL. |
| **Office Action Summary** | Examiner | Art Unit | |
| | Thomas H. Stevens | 2123 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)☒ Responsive to communication(s) filed on <u>08/28/2006 & 10/27/2006</u>.

2a)☐ This action is **FINAL.**    2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)☒ Claim(s) <u>2-10 and 12-21</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>2-10 and 12-21</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

## Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>10/27/2006 8/28/06</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

## DETAILED ACTION

1.    Claims 2-10 and 12-21 were examined.

### *Section I: Non-Final Rejection*

### *Claim Rejections - 35 USC § 101*

2.    35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3.    Claims 2-10 and 12-21 are rejected under 35 U.S.C. 101 because the functional language is not directed towards a tangible result.

### *Claim Rejections - 35 USC § 103*

4.    The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.    The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

    1.    Determining the scope and contents of the prior art.
    2.    Ascertaining the differences between the prior art and the claims at issue.
    3.    Resolving the level of ordinary skill in the pertinent art.
    4.    Considering objective evidence present in the application indicating obviousness or nonobviousness.

6.      This application currently names joint inventors. In considering patentability of
the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of
the various claims was commonly owned at the time any inventions covered therein
were made absent any evidence to the contrary. Applicant is advised of the obligation
under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was
not commonly owned at the time a later invention was made in order for the examiner to
consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)
prior art under 35 U.S.C. 103(a).

7.      Claims 2-10 and 12-21 are rejected under 35 U.S.C. 103(a) as being
unpatentable over Rosenberg et al., (US Patent 5,907,487 hereafter Rosenberg) in view
of Ridgell, Jr. et al., (US Patent 6,442,104 hereafter Ridgell). Rosenberg teaches
support system comprising: a mechanism (Rosenberg: column 46, lines 47-50)
designing section for three-dimensionally designing a mechanism (Rosenberg: column
46, lines 47-50) composed of a plurality of parts including an actuator and a sensor
(Rosenberg: column 9, line 38); a three-dimensional-mechanism (Rosenberg: column
46, lines 47-50) model simulating (Rosenberg: column 1, line 26) section, in which the
mechanism (Rosenberg: column 46, lines 47-50) is structured as a
three-dimensional-mechanism (Rosenberg: column 46, lines 47-50) model for
simulating (Rosenberg: column 1, line 26) an operation mechanism (Rosenberg: column
46, lines 47-50): an embedded software  (Rosenberg: column 24, line 42) developing
section for developing a control (Rosenberg: column 1, line 26, "controlled simulations")
program, which is to be embedded in the mechanism (Rosenberg: column 46, lines 47-

50) to control (Rosenberg: column 1, line 26, "controlled simulations") the operation of

the mechanism, as embedded software  (Rosenberg: column 24, line 42); but fails to

teach first and second interfaces. Ridgell teaches first and second interfaces (Ridgell:

column 3, lines 65-67).

Rosenberg and Ridgell are analogous since they teach computer simulation.

Therefore it would have been obvious to one having ordinary skill in the art at the

time of invention was made to utilize the plurality of computer simulation devices of

Ridgell in the sensor signal indicators of Rosenberg because Ridgell teaches a method

to reduce the amount of hardware necessary to generate the larger number of digital

signals required for a realistic simulation (Ridgell: column 3, lines 33-35).


Claim 2. A support system according to claim 3, wherein said first interface (Ridgell: column

3, line 59) section inputs the result of the simulating (Rosenberg: column 1, line 26) by said

three-dimensional mechanism (Rosenberg: column 46, lines 47-50) model simulating

(Rosenberg: column 1, line 26) section from said three-dimensional-mechanism (Rosenberg:

column 46, lines 47-50) model simulating (Rosenberg: column 1, line 26) section to said

mechanism (Rosenberg: column 46, lines 47-50) designing section to be reflected on the

designing of the mechanism.


Claim 3. A support system comprising: a mechanism (Rosenberg: column 46, lines 47-50)

designing section for three-dimensionally designing a mechanism (Rosenberg: column 46,

lines 47-50) composed of a plurality of parts including an actuator and a sensor (Rosenberg:

column 9, line 38); a three-dimensional-mechanism (Rosenberg: column 46, lines 47-50)

model simulating (Rosenberg: column 1, line 26) section, in which the mechanism

(Rosenberg: column 46, lines 47-50) is structured as a three-dimensional-mechanism

(Rosenberg: column 46, lines 47-50) model for simulating (Rosenberg: column 1, line 26) an

operation mechanism (Rosenberg: column 46, lines 47-50): an embedded software

(Rosenberg: column 24, line 42) developing section for developing a control (Rosenberg:

column 1, line 26, "controlled simulations") program, which is to be embedded in the

mechanism (Rosenberg: column 46, lines 47-50) to control (Rosenberg: column 1, line 26,

"controlled simulations") the operation of the mechanism, as embedded software

(Rosenberg: column 24, line 42); a first interface (Ridgell: column 3, line 65) section for

inputting design data, which is created in said mechanism (Rosenberg: column 46, lines 47-

50) designing section a the result of the designing by said mechanism (Rosenberg: column

46, lines 47-50) designing section, from said mechanism (Rosenberg: column 46, lines 47-50)

designing section to said three-dimensional mechanism (Rosenberg: column 46, lines 47-50)

model simulating (Rosenberg: column 1, line 26) section to be reflected on the

three-dimensional-mechanism (Rosenberg: column 46, lines 47-50) model: and a second

interface (Ridgell: column 3, line 67) section transferring actuator instruction data and sensor

(Rosenberg: column 9, line 38) data between said three-dimensional-mechanists model

simulating (Rosenberg: column 1, line 26) section and said bedded software (Rosenberg:

column 24, line 42) developing section while synchronizing said

three-dimensional-mechanism (Rosenberg: column 46, lines 47-50) model simulating

(Rosenberg: column 1, line 26) section and said embedded software (Rosenberg: column 24,

line 42) developing section in operation with each other, wherein: said embedded software

(Rosenberg: column 24, line 42) developing section includes a status-transition diagram or

table (common feature in software)creating section for creating and editing a status-transition

diagram or table (common feature in software)describing specifications of the embedded

software (Rosenberg: column 24, line 42) to execute detailed designing of the embedded

software (Rosenberg: column 24, line 42); and said second interface section transfers data

between said three-dimensional mechanism (Rosenberg: column 46, lines 47-50) model

simulating (Rosenberg: column 1, line 26) section and said status-transition diagram or table

(common feature in software) creating section while synchronizing said

three-dimensional-mechanism (Rosenberg: column 46, lines 47-50) model simulating

(Rosenberg: column 1, line 26) section and said status-transition diagram or table (common

feature in software) creating section in operation with each other.


Claim 4. A support system according to claim 3, wherein: said status-transition diagram or

table (common feature in software) creating section employs a multi-task, which executes a

plurality of tasks in parallel to one another, and executes, separately from the plural tasks

(Rosenberg: column 1, lines 25-27, "control led simulations"), a synchronous (Rosenberg:

column 37, lines 20-24) task functioning so as to stop the plural tasks (Rosenberg: column

2, lines 25-27, "control led simulations") during the simulation operation of said

three-dimensional-mechanism (Rosenberg: column 46, lines 47-50) model simulating

(Rosenberg: column 1, line 26) section; and said second interface (Ridgell: column 3, lines

65-67) section synchronizes said three-dimensional-mechanism (Rosenberg: column 46,

lines 47-50) model simulating (Rosenberg: column 1, line 26) section and said

status-transition diagram or table (common feature in software) creating section in

operation with each other using the synchronous (Rosenberg: column 37, lines 20-24) task.

Claim 5. A support system according to claim 4, wherein the synchronous (Rosenberg:

column 37, lines 20-24) task is set to a highest priority to control (Rosenberg: column 1, line

26, "controlled simulations") starting/stopping of the plural tasks (Rosenberg: column 2, lines

25-27, "control led simulations") in accordance to the synchronous (Rosenberg: column 37,

lines 20-24) task to thereby synchronize said three-dimensional-mechanism (Rosenberg:

column 46, lines 47-50) model simulating (Rosenberg: column 1, line 26) section and said

status-transition diagram or table (common feature in software) creating section in operation

with each other.

Claim 6. A support system according to claim 6 wherein: said embedded software

(Rosenberg: column 24, line 42) developing section includes a microcomputer chip

(Rosenberg: column 8, line 8) in which said embedded software (Rosenberg: column

24, line 42) is embedded during the developing; and said second interface (Ridgell:

column 3, lines 65-67) section transfers data between said

three-dimensional-mechanism (Rosenberg: column 46, lines 47-50) model simulating

(Rosenberg: column 1, line 26) section and said microcomputer chip  (Rosenberg:

column 8, line 8) while synchronizing said three-dimensional-mechanism (Rosenberg:

column 46, lines 47-50) model simulating (Rosenberg: column 1, line 26) section and

said microcomputer chip (Rosenberg: column 8, line 8)in operation with each other.


Claim 7. A support system according to claim 6, wherein: said microcomputer chip

(Rosenberg: column 8, line 8) employs a multi-task, which executes a plurality of tasks

in parallel to one another, and executes, separately from the plural tasks (Rosenberg:

column 1, line 26, "controlled simulations"), a synchronous (Rosenberg: column 37,

lines 20-24) task functioning so as to stop the plural tasks (Rosenberg: column 2, lines

25-27, "control led simulations") during the simulation operation of said three--

dimensional-mechanism (Rosenberg: column 46, lines 47-50) model simulating

(Rosenberg: column 1, line 26) section; and said second interface (Ridgell: column 3,

lines 65-67) section synchronizes said three-dimensional-mechanism (Rosenberg:

column 46, lines 47-50) model simulating (Rosenberg: column 1, line 26) section and

said microcomputer chip  (Rosenberg: column 8, line 8)in operation with each other

using the synchronous (Rosenberg: column 37, lines 20-24) task.

Claim 8. A support system according to claim 7, wherein said three-dimensional

mechanism (Rosenberg: column 46, lines 47-50) model simulating (Rosenberg: column

1, line 26) section and said microcomputer chip (Rosenberg: column 8, line 8) are

synchronized (common feature in computer operating system, e.g., Microsoft) in

operation with each other by setting the synchronous (Rosenberg: column 37, lines 20-

24) task to a highest priority (user's discretion) to control (Rosenberg: column 1, line 26,

"controlled simulations") starting/stopping of the plural tasks (Rosenberg: column 2,

lines 25-27, "control led simulations") in accordance to the synchronous (Rosenberg: column 37, lines 20-24) task.

Claim 9. A support system according to claim 7, wherein said second interface (Ridgell: column 3, lines 65-67) section transfers: an actuator instruction signal for the actuator in the three-dimensional-mechanism (Rosenberg: column 46, lines 47-50) model from said embedded software (Rosenberg: column 24, line 42) developing section to said three-dimensional-mechanism (Rosenberg: column 46, lines 47-50) model simulating (Rosenberg: column 1, line 26) section; and a sensor (Rosenberg: column 9, line 38) signal, which is obtained as the result of simulation in response to said actuator instruction signal, (Rosenberg: column 4, line 35-36)from said three-dimensional-mechanism (Rosenberg: column 46, lines 47-50) model simulating (Rosenberg: column 1, line 26) section to said embedded software  (Rosenberg: column 24, line 42) developing section.

Claim 10.  A support system according to claim 9, further comprising an analyzing section for analyzing and displaying variation of said actuator instruction signal for the actuator and said sensor (Rosenberg: column 9, line 38) signal from said three-dimensional-mechanism (Rosenberg: column 46, lines 47-50) model simulating (Rosenberg: column 1, line 26) section with real time.

Claim 12. A computer readable recording medium according to claim13, wherein said

first interface (Ridgell: column 3, line 59) program input a suit of the simulating

(Rosenberg: column 1, line 26) by said three-dimensional-mechanism (Rosenberg:

column 46, lines 47-50) model simulating (Rosenberg: column 1, line 26) section from

said three-dimensional-mechanism (Rosenberg: column 46, lines 47-50) model

simulating (Rosenberg: column 1, line 26) section to said mechanism (Rosenberg:

column 46, lines 47-50) designing section to be reflected on the designing of the

mechanism.

Claim 13. A computer-readable recording medium according to claim 13, in which a support

program to realize, on a computer, a function of assisting a development of embedded

software  (Rosenberg: column 24, line 42) to be embedded in a mechanism, composed of a

plurality of parts including an actuator and a sensor (Rosenberg: column 9, line 38), as a

control (Rosenberg: column 1, line 26, "controlled simulations") program to control

(Rosenberg: column 1, line 26, "controlled simulations") the mechanism (Rosenberg:

column 46, lines 47-50) is recorded, said support program (software) comprising: a

mechanism (Rosenberg: column 46, lines 47-50) designing program for instructing the

computer to function as a mechanism (Rosenberg: column 46, lines 47-50)designing

section which designs the mechanism (Rosenberg: column 46, lines 47-50)

three-dimensionally; a three-dimensional-mechanism (Rosenberg: column 46, lines 47-

50)model simulating (Rosenberg: column 1, line 26) program for instructing the computer to

function as a three-dimensional-mechanism (Rosenberg: column 46, lines 47-50)

simulating (Rosenberg: column 1, line 26) region in which the mechanism (Rosenberg:

column 46, lines 47-50) is structured as a three-dimensional-mechanism (Rosenberg:

column 46, lines 47-50)model for simulating (Rosenberg: column 1, line 26) an operation of

the mechanism (Rosenberg: column 46, lines 47-50) an embedded software  (Rosenberg:

column 24, line 42) developing program for instructing the computer to function (common

functions of a computer) as an embedded software (Rosenberg: column 24, line 42)

developing section which develops the embedded software  (Rosenberg: column 24, line

42); a first interface (Ridgell: column 3, line 59) program for instructing the computer to

function (common functions of a computer) as a first interface (Ridgell: column 3, line 59)

section for inputting designing data which is created in said mechanism (Rosenberg:

column 46, lines 47-50) designing section as the stilt of the designing by said mechanism

(Rosenberg: column 46, lines 47-50)designing section, from the mechanism (Rosenberg:

column 46, lines 47-50) designing section to the three-dimensional-mechanism

(Rosenberg: column 46, lines 47-50) model simulating (Rosenberg: column 1, line 26)

section to be reflected on the three-dimensional-mechanism (Rosenberg: column 46, lines

47-50) model: a second interface (Ridgell: column 3, lines 65-67) program for instructing

the computer to function as a second interface (Ridgell: column 3, lines 65-67) section

which transfers actuator instruction data and sensor (Rosenberg: column 9, line 38) data

between the three dimensional-mechanism (Rosenberg: column 46, lines 47-50)model

simulating (Rosenberg: column 1, line 26) section and the embedded software

(Rosenberg: column 24, line 42) developing section while synchronizing the

three-dimensional-mechanism (Rosenberg: column 46, lines 47-50)model simulating

(Rosenberg: column 1, line 26) section and the embedded software  (Rosenberg: column

24, line 42) developing section in operation with each other, wherein: said embedded

software (Rosenberg: column 24, line 42) developing program includes a status-transition

diagram or table (common feature in software) creating program instructing the compiler

(common feature in software) to function as a status-transition diagram or table (common

feature in software)creating section for creating and editing (common in most software

programs) a status-transition diagram or table (common feature in software) describing

specifications of the embedded software  (Rosenberg: column 24, line 42) to execute

detailed designing of the embedded software  (Rosenberg: column 24, line 42); and said

second interface (Ridgell: column 3, lines 65-67) program transfers data between said

three-dimensional mechanism (Rosenberg: column 46, lines 47-50) model simulating

(Rosenberg: column 1, line 26) section and said status-transition diagram or table (common

feature in software) creating section while synchronizing said

three-dimensional-mechanism (Rosenberg: column 46, lines 47-50) model simulating

(Rosenberg: column 1, line 26) section and said status-transition diagram or table (common

feature in software) creating section in operation with each other.


Claim 14. A computer-readable recording medium according to claim 13,

wherein: said status-transition diagram or table (common feature in software) creating

program employs a multi-task, (Rosenberg: column 1, line 26, "controlled simulations")

which executes a plurality of tasks (Rosenberg: column 1, line 26, "controlled

simulations") in parallel to one another, and executes, separately from the plural tasks

(Rosenberg: column 1, lines 25-27, "control led simulations"), a synchronous

(Rosenberg: column 37, lines 20-24) task functioning so as to stop the plural tasks

(Rosenberg: column 2, lines 25-27, "control led simulations") during the simulation

operation of said-three-dimensional-mechanism (Rosenberg: column 46, lines 47-50)

model simulating (Rosenberg: column 1, line 26) section; and said second interface

(Ridgell: column 3, lines 65-67) program synchronizes said

three-dimensional-mechanism (Rosenberg: column 46, lines 47-50) model simulating

(Rosenberg: column 1, line 26) section and said status-transition diagram or table

(common feature in software) creating section in operation with each other using the

synchronous (Rosenberg: column 37, lines 20-24) task.


Claim 15. A computer-readable recording medium according to claim 14, wherein said

three-dimensional-mechanism (Rosenberg: column 46, lines 47-50) model simulating

(Rosenberg: column 1, line 26) section and said status-transition diagram or table

(common feature in software) creating section are synchronized (common feature in

computer operating system, e.g., Microsoft) in operation with each other by setting the

synchronous (Rosenberg: column 37, lines 20-24) task to a highest priority to control

(Rosenberg: column 1, line 26, "controlled simulations") starting/stopping of the plural

tasks (Rosenberg: column 2, lines 25-27, "control led simulations") in accordance to the

synchronous (Rosenberg: column 37, lines 20-24) task.

Claim 16. A computer-readable recording medium according to slain-1-1tlaim 13,

wherein said second interface (Ridgell: column 3, lines 65-67) program transfers data

between said three-dimensional-mechanism (Rosenberg: column 46, lines 47-50)

model simulating (Rosenberg: column 1, line 26) section and a microcomputer chip, in

which said embedded software (Rosenberg: column 24, line 42) being developed is

embedded, while synchronizing said three-dimensional mechanism (Rosenberg: column

46, lines 47-50) model simulating (Rosenberg: column 1, line 26) section and said

microcomputer chip (Rosenberg: column 8, line 8) in operation with each other.


Claim 17. A computer-readable recording medium according to claim 16, wherein: said

microcomputer chip (Rosenberg: column 8, line 8) employs a multi-task, which executes

a plurality of tasks (Rosenberg: column 1, lines 25-27, "control led simulations") in

parallel to one another, and executes, separately from the plural tasks (Rosenberg:

column 1, lines 25-27, "control led simulations"), a synchronous (Rosenberg: column 37,

lines 20-24) task functioning so as to stop the plural tasks (Rosenberg: column 2, lines

25-27, "control led simulations") during the simulation operation of said three-

dimensional-mechanism (Rosenberg: column 46, lines 47-50) model simulating

(Rosenberg: column 1, line 26) section: and said second interface (Ridgell: column 3,

lines 65-67) program synchronizes said three-dimensional-mechanism (Rosenberg:

column 46, lines 47-50) model simulating (Rosenberg: column 1, line 26) section and

said microcomputer chip (Rosenberg: column 8, line 8) in operation with each other

using the synchronous (Rosenberg: column 37, lines 20-24) task.

Claim 18. A computer-readable recording medium according to claim 17, wherein said synchronous (Rosenberg: column 37, lines 20-24) task is set to a highest priority (user's choice) to control (Rosenberg: column 1, line 26, "controlled simulations") starting/stopping of the plural tasks (Rosenberg: column 2, lines 25-27, "control led simulations") in accordance to the synchronous (Rosenberg: column 37, lines 20-24) task to thereby synchronize said three-dimensional-mechanism (Rosenberg: column 46, lines 47-50) model simulating (Rosenberg: column 1, line 26) section and said microcomputer chip (Rosenberg: column 8, line 8) in operation with each other.

Claim 19. A computer-readable recording medium according to claim 13, wherein said second Interface program transfers: an actuator instruction signal for the actuator in the three-dimensional-mechanism (Rosenberg: column 46, lines 47-50) model from said embedded software (Rosenberg: column 24, line 42) developing section to said three-dimensional-mechanism (Rosenberg: column 46, lines 47-50)model simulating (Rosenberg: column 1, line 26) section; and a sensor (Rosenberg: column 9, line 38) signal, which is obtained as their result of simulation in response to said actuator instruction signal, (Rosenberg: column 4, line 35-36) from said three-dimensional-mechanism (Rosenberg: column 46, lines 47-50) model simulating (Rosenberg: column 1, line 26) section to said embedded software (Rosenberg: column 24, line 42) developing section.

Claim 20. A computer-readable recording (Rosenberg: column 1, line 26) medium

according to claim 19, wherein said support program further comprises an analyzing

program for instructing the computer to function as an analyzing section which analyzes

and displays variation of said actuator instruction signal for the actuator and said sensor

(Rosenberg: column 9, line 38) signal from said three-dimensional mechanism

(Rosenberg: column 46, lines 47-50) model simulating (Rosenberg: column 1, line 26)

section with real time.


Claim 21. A support computer apparatus comprising; a programmed computer

processor controlling (Rosenberg: column 1, lines 25-27, "control led simulations")

(Rosenberg: column 1, line 26, "controlled simulations") the support computer apparatus

according to a process comprising: three-dimensionally designing a mechanism

(Rosenberg: column 46, lines 47-50) composed of a plurality of parts comprising an

actuator and a sensor (Rosenberg: column 9, line 38); simulating (Rosenberg: column

1, line 26) operation of the mechanism (Rosenberg: column 46, lines 47-50) according

to a three-dimensional mechanism (Rosenberg: column 46, lines 47-50)model of the

mechanism (Rosenberg: column 46, lines 47-50)based upon design data from the

three-dimensional designing of the mechanism; developing an embedded control

(Rosenberg: column 1, line 26, "controlled simulations") program to be embedded in the

mechanism (Rosenberg: column 46, lines 47-50) to control (Rosenberg: column 1, line

26, "controlled simulations") the operation of the mechanism, by creating and Editing a

status-transition diagram or table (common feature in software) describing specifications

of the embedded control (Rosenberg: column 1, line 26, "controlled simulations")

program as detailed designing of the embedded control (Rosenberg: column 1, line 26,

"controlled simulations") program, and exchanging mechanism (Rosenberg: column 46,

lines 47-50)data and the status-transition specifications with the

three-dimensional-mechanism (Rosenberg: column 46, lines 47-50) model simulating

(Rosenberg: column 1, line 26) while synchronizing the three-dimensional-mechanism

(Rosenberg: column 46, lines 47-50) model simulating (Rosenberg: column 1, line 26)

with the status-transition specifications for the developing of the embedded control

(Rosenberg: column 1, line 26, "controlled simulations") program.

### *Section II: Response to Arguments*

### *Abstract*

8.     Applicants are thanked for addressing this issue. Objection is withdrawn.

### *Prior Art*

9.     Rejections are withdrawn.

### *English Translations*

10.    The Office acknowledges receiving English translated Japanese documents WO

00/36477 and JP402253303 as stated in the interview conducted April 21, 2006 while

HEI 02-253303 was also considered; however, the Japanese Patent Application

number 2000-034642 was not considered (see section I, Information Discloser

Statement). The Office is unclear regarding applicants' statements on page 11, 3$^{rd}$

paragraph regarding finality.

### *Rejections*

11.    Applicant's arguments, see pages 12-14, filed 08/28/2006, with respect to the

rejection(s) of claim(s) 2-10 and 12-21 under 35 102(b) and 102(e) have been fully

considered and are persuasive.  Therefore, the rejection has been withdrawn.

However, upon further consideration, a new ground of rejection is made in view of

Rosenberg and Ridgell.

### *Citation to Relevant Prior Art*

The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure:

Jo et al., "Virtual Testing of Agile Manufacturing Software Using 3D Graphics Simulation" IEEE 1997 pg. 1223-1228:

teaches a method of agile 3D simulation for various workcell scenarios.

### *Correspondence Information*

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Mr. Tom Stevens whose telephone number is 571-272-
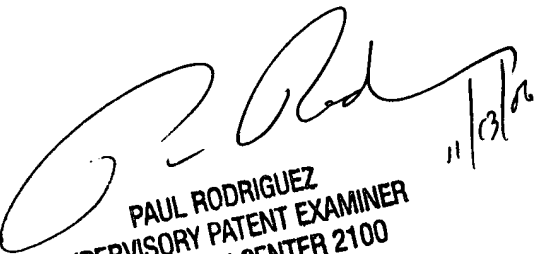
3715, Monday-Friday (8:00 am- 4:30 pm EST).

If attempts to reach the examiner by telephone are unsuccessful, please contact examiner's supervisor Mr. Paul Rodriguez 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov.. Answers to questions regarding access to the Private PAIR system, contact the Electronic Business Center (EBC) (toll-free (866-217-9197)).

November 7, 2006

TS

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